

22. In the transport input market, transport facilities and services (such as dark fiber and/or private line services) are primarily bought on a point-to-point basis. A carrier such as Qwest might seek to lease DS-3s to extend its network in areas it currently does not serve through its own facilities. These kinds of transactions should be analyzed on a route-specific basis. The geographic market for transport is thus defined by the two destination points served by the route. For example, the geographic markets for transport connecting Boston to New York would be only Boston and New York. Of course, as the FCC suggests, these routes may also be aggregated into wider regional groupings if wholesale consumers face similar market conditions within an area (i.e., a traffic corridor).⁹

23. Capacity shortages are unequally distributed throughout the United States, affecting some areas more severely than others. Exhibit 18 of my first long-distance affidavit showed wide areas of the United States where AT&T was experiencing a capacity shortage. These shortages provide compelling evidence that market conditions are not uniform across the United States and should be analyzed on a route-by-route basis.

24. WorldCom COO and UUNet CEO John Sidgmore recently agreed that there are capacity shortages on long-distance networks, explaining that "[w]e have seen the obvious bandwidth shortages this year."¹⁰ According to *Network World*:

"If you think the Internet is backed up, wait until you go out and try to buy a T-3 circuit. You're likely to find that high-speed pipes are suddenly hard to come by, installation intervals are lengthening, and prices continue to increase."¹¹

⁹ In the *LEC In-Region Interexchange Order*, *op. cit.*, this Commission found that each point-to-point market constituted a separate geographic market. It further concluded, however, groups of point-to-point markets could be identified where customers faced the same competitive conditions. Geographic markets could be defined as an area in which all customers in that area will likely face the same competitive alternatives for a product.

¹⁰ "WorldCom's Sidgmore sizes up the deal," *Network World*, November 17, 1997, <http://www.nwfusion.com/news/1117sidgmore.html>.

¹¹ "The Great T-3 Shortage," David Rohde, *Network World*, March 31, 1997, <http://www.nwfusion.com/news/0216att2.html>.

C. Competition in high density metropolitan areas cannot constrain prices elsewhere

25. Drs. Carlton and Sider rely on their claim of a national geographic market to reach their conclusion that competition in high density metropolitan areas served by a large number of facilities-based providers will constrain pricing for services in lower density areas with few competing networks because of the geographic averaging requirements for retail rates.¹² However, their claim that "consumers throughout an interexchange provider's service area generally face the same pricing schedule," is both conceptually and factually incorrect.¹³ First, federal geographic rate averaging requirements cited by Carlton and Sider only apply to retail interstate tariffs. Because these requirements do not apply at the wholesale level, carriers can and do charge higher wholesale prices relative to cost on routes with less competition. Second, carriers can and do target their marketing efforts in areas where competition is strongest. Third, carriers can respond to regional competition "hot spots" by dropping intrastate toll prices. Fourth, empirical data shows that both wholesale and retail long-distance effective prices vary substantially among geographical areas. Fifth, carriers regularly file discounted tariffs featuring short "ordering windows," as a means to specifically capture the business of a particularly lucrative customer.

1. Wholesale prices are not subject to geographic price averaging

26. The FCC geographic price averaging requirements only apply to the final, retail sale of long-distance services to end-users. Carlton and Sider do not take into account the fact that the wholesale services I have discussed, such as bulk transport and wholesale long-distance network services, are not covered by this requirement. Therefore, carriers are permitted to set route-specific prices on high-volume circuits (*i.e.* transport). For example, tariffs for high capacity private line services, such as DS-3s over low traffic density routes, are often issued on a case-by-case pricing basis. WorldCom itself prices its DS-3 circuits serving lower traffic density LATAs (known as Tier B or Tier C LATAs), on an individual case basis (ICB) only.¹⁴

27. Similarly, the pricing of wholesale long-distance network services is dependent on the supply conditions of the originating and terminating points. A typical example is the *Transcend* bulk wholesale rates offered by WorldCom's WilTel division, to which Drs. Carlton and Sider have previously referred. Under the *Transcend* rates, a switchless reseller can purchase minutes of use on the WilTel network at a price which reflects the supply conditions at the end-points. Specifically, each LATA is assigned an A, B or C designation, which indicates the rate for traffic originating or terminating in that LATA. The final rate charged is the average of originating and terminating tiers' rates, plus unbundled access charges.

¹² See *Second Declaration of Dennis W. Carlton and Hal S. Sider*, CC Docket No. 97-211, March 19, 1998, p. 12.

¹³ *Id.*

¹⁴ WorldCom Network Services, Inc. d/b/a WilTel® Network Services, FCC Tariff No. 4 P.97.1 (WorldCom Private Line Service Offerings), Issued 10/23/97.

Table 1: WorldCom Transcend Wholesale Long-distance Rates

<u>Tier</u>	<u>Percent of Population</u>	<u>Cents per Switched Minute</u>
A	62%	4.0
B	23%	4.5
C	15%	5.0

Source: Yankee Group Telecommunications Module, Volume #11,
Issue #4, March 1996.

28. Therefore, if a switchless reseller were to purchase an interLATA minute of use under this tariff from Billings, Montana, to Great Falls, Montana, the rate would be 5¢ per minute (as both the Billings and Great Falls LATAs are classified by WorldCom as "C" LATAs). By way of contrast, a minute of use between Portland, Oregon, and Billings would be rated at 4.5¢ per minute, while a minute between Portland and New York City would be rated at 4¢ per minute (as both the Portland and New York City LATAs are classified as "A" LATAs).

29. These differences in relative prices provide clear evidence that retail price averaging requirements have not caused wholesale prices to be geographically averaged. Importantly, these price differences in wholesale transport and network prices are highly correlated with competitive conditions across these locales. Competition from new long-distance networks is focused on Tier A cities, with very limited competition in Tier B cities. Not surprisingly, Tier A cities are located in LATAs with more long-distance networks than Tier B or Tier C cities, as shown in Table 2 below.

Table 2: Competition and Prices Across LATAs
(WorldCom Transcend Wholesale Long Distance Rates)

<u>Tier</u>	<u>Existing Competitors</u>	<u>Price Difference</u>
A	4.5	--
B	4.0	+13%
C	3.2	+25%

Source: LATA Tier as defined in WorldCom FCC Tariff #4. Average of number of facilities-based national networks with at least one on-net POP for each LATA in tier as of March 1998. The networks counted are AT&T, MCI, Sprint, WorldCom, and Frontier.

30. The data indicates a clear correlation between market structure and the pricing of wholesale network services. While the incumbent long-distance providers may suggest that these pricing differences may be explainable by differences in costs between dense routes and less dense routes, we need to bear in mind that the incumbents' short-run marginal cost of long-distance transport is practically zero, as most costs are wholly sunk. The difference between price and marginal cost is determined by strategic interactions between competitors – the fewer competitors, the higher the margins.¹⁵

31. This correlation between structure and performance in the market for wholesale transport and wholesale long-distance service suggests that this market is far from workably competitive, and that the elimination of a significant competitor through merger could therefore lead to a significant non-transitory increase in wholesale prices.

2. Intrastate toll pricing can be lowered in response to competitive pressure

32. Carriers can also effectively de-average their prices by lowering or increasing intrastate prices, as intrastate calling is a sizable percentage of total toll calling.¹⁶ In response to the entry of SNET into the long-distance market in Connecticut in April, 1996, AT&T petitioned the FCC to allow it to reduce its interstate long-distance rates in Connecticut alone. AT&T had to do this, the company argued, to respond to “the rapidly emerging competition from SNET in Connecticut.”¹⁷ MCI made the same request. The Commission denied both requests, requiring prices to be uniform nationwide. These requests, however, are a clear indication that the interexchange carriers are willing to lower prices wherever competition heats up in specific geographic areas. Because AT&T was not permitted to lower interstate prices, it responded with a special promotion for all customers who signed up with AT&T by April, 1997; AT&T lowered off-peak *intrastate* prices to 5¢ per minute, a promotion which lasted until March 31, 1998.¹⁸

¹⁵ Note that I am not advocating that telecommunications services be priced at short-run marginal cost (unlike MCI's expert Robert Hall, who indicates that a Bertrand model is an appropriate view of competition in the bulk transport market. See *Hall Declaration* at p. 7). Rather, I am suggesting the real-world notion that the difference between price and marginal cost is directly related to the number of competitors.

¹⁶ See Federal Communications Commission, *Statistics of Communications Common Carriers*, 1996-97.

¹⁷ Peter Huber, “Local Exchange Competition under the 1996 Telecom Act: Red-lining the Local Residential Customer,” November 4, 1997, p. 48. Huber is citing AT&T Corporation's Petition for Reconsideration at 2, Policy and Rules Concerning the Interstate, Interexchange Marketplace, CC Docket No. 96-61, Filed with the FCC April 19, 1996.

¹⁸ Telephone Interview with AT&T Customer Service Representative Bonnie Eubanks, March 9, 1998.

33. A systematic analysis of intrastate prices shows that there is a structural relationship between the degree of facilities-based competition in a state and the prices paid by consumers for intrastate service in that state. For each multi-LATA state, I have collected data on intrastate tariffs and intrastate access charges. As long-distance carriers do not disclose their state-specific market shares of intrastate traffic, constructing an appropriate price index is quite difficult. As a proxy, I examined AT&T's 1997 basic tariff for intrastate message telephone service. I examined the undiscounted basic rate as well as rates discounted 20%. This is a reasonable approximation to the average effective price, as AT&T accounts for around half of intrastate traffic, and most of it is purchased at basic rates, or at a standard discount off basic rates. Because National Exchange Carrier Association (NECA) data on average access charges for 1997 are not yet available, I subtracted out 1996 intrastate access charges, an appropriate proxy. As a measure of competition, I've computed a state-specific Herfindahl-Hirschman Index based on the number of POPs in operation at the end of 1997 in that state for the main long-distance carriers and the leading fringe competitors.¹⁹

34. The results reported in Table 3 below are striking: net prices are strongly and significantly correlated with the POP-based measure of concentration. A 400-point increase in the POP-based HHI (which is roughly what this merger will produce) was associated with a 1.8¢ increase in basic intrastate rates, and a 1.6¢ increase in 20% discounted intrastate rates, both net of access charges.²⁰ It is also important to note that I have corrected for cost-driven price differences and endogeneity of concentration in each state by including a measure of traffic density and by employing a two-stage least squares approach.

¹⁹ Companies included in the index were: AT&T, MCI, Sprint, WorldCom, Frontier, LCI, IXC, and Cable & Wireless. Qwest and Williams had negligible POP presences in 1997.

²⁰ The effect of an increase in the HHI can be estimated by multiplying the change in HHI (in hundreds) by the HHI coefficient. Therefore, a 400 point increase in the HHI is associated with a 1.8 ¢/min. increase in basic intrastate interLATA rates ($4 \times 0.46 = 1.84$).

Table 3: Concentration and Intrastate Pricing
Effect on AT&T Intrastate Rates Net of Access Charges

	<u>Dependent Variable</u>	
	(I) <u>Basic - Acc. Chg.</u>	(II) <u>Basic x 80% - Acc. Chg.</u>
Prob(F)	0.2%	0.2%
Adjusted R ²	18.2%	14.7%
<u>Independent Variables</u>		
Constant	11.5 (8.5)	6.6 (6.9)
State HHI	0.46* (0.28)	0.41** (0.23)
Long Distance Minutes/LATA	-1.4** (0.65)	-1.0** (0.54)
Area/LATA	0.089* (0.065)	0.063 (0.053)

Note: Ordinary Least Squares regression of rates net of access charges (in cents per minute) on state-specific HHI (x100), total interLATA minutes per LATA per year (millions), and average square mileage per LATA in state (x1000). AT&T MTS rates for intrastate interLATA service, 150-200 miles weekday peak period, average per minute rate for a three minute call. HHI index based on POPs operated in the state at the end of 1997 by AT&T, MCI, Sprint, WorldCom, Frontier, IXC, Qwest, LCI and Cable & Wireless. Two stage least squares regression with instrumental projection of the state HHI variable. Regression covers only multiple LATA states (N=39). * and ** denote coefficient significance at the 90% and 95% one-tailed confidence level, respectively. Standard errors shown in parentheses beneath coefficients.

35. As Table 4 below shows, rates in states with high POP concentrations are substantially higher than in states with more competitive market structures.

Table 4: Relation Between Concentration and AT&T Posted Intrastate Rates
Average HHI and Rates By Quintiles

<u>Quintile</u>	<u>POP-based HHI</u>	<u>AT&T Basic Rate</u> <u>(cents per minute net of</u> <u>access charges)</u>
Top	3,460	25.8
Median	2,570	23.7
Bottom	1,870	20.5

AT&T 1997 MTS rates for intrastate interLATA additional minutes, 150-200 miles weekday peak period. Average rate per minute for a three minute call, net of intrastate access charges.

36. Additionally, these rate differentials are not justified on the basis of cost differences, even assuming that a hypothetical supplier were to provide intrastate service using an out-of-state switch. For example, in the case of Montana, I have calculated the incremental cost of building a fiber spur from Seattle (the nearest large population center) to Billings and Great Falls via Spokane and Coeur d'Alene. Given the combined interstate and intrastate traffic that such a route would carry, and an assumed traffic share of 30%, I estimate the long-run incremental transport cost differential to be at most 1.5¢ per conversation minute.²¹ Therefore, if the difference in intrastate rates were truly cost-based, then intrastate service in Montana should be no more than 1.5¢ per minute more expensive than in Washington. Instead, AT&T's intrastate basic rate in Montana (net of access charges) is at least 10¢/min. more expensive than the 10.4¢/min. rate paid by basic rate customers in Washington.

37. Clearly, lowering intrastate or intraLATA prices in geographic areas in response to strong localized competition is a strategy that long-distance carriers use to effectively de-average their retail rates. It also provides evidence that retail geographic markets should not be defined on a national basis and indicates that the MCI-WorldCom merger is likely to lead to a substantial increase in intrastate rates.

²¹ The average cost calculation assumes a capital cost of \$200,000 per mile of lit fiber, with only one system (two strands active plus two reserve) operating at OC-192, with a weighted average economic life of 13 years, and O&M costs of 1.5% of the capital cost per year. A spur from Billings to Seattle via Helena, Coeur d'Alene and Spokane would be about 820 miles (based on highway distances), and I compute its levelized total annual cost to be approximately \$35 million (capital + operating expenses). This spur could then handle all of the carrier's voice-band interLATA traffic (intrastate and interstate) from these five LATAs. I also assume that a carrier has 30% share of interLATA traffic in these LATAs (its share would therefore be 1.5 billion minutes per year in 1996), that voice-band traffic grows at 10% p.a., and that 50% of the capacity and associated costs is reserved for Internet and other data applications. Dividing the levelized cost allocated to the voice-band traffic by the levelized voice-band traffic, I obtain a transport cost of 0.7¢ per transported minute, or about 1.5¢ cents per conversation minute.

3. Retail marketing efforts vary according to the intensity of regional competition

38. MCI-WorldCom's experts also ignore the fact that long-distance carriers can effectively offer geographic-specific retail discounts to customers in areas served by a large number of competing networks. They do so by focusing their marketing efforts more in these areas than in more remote areas which are served by fewer competing networks. Because of the lack of competitive pressure on the Big Three in isolated areas, these carriers do little to promote and market their low-priced calling plans there. One way to measure the extent of target marketing is through local advertising. It is instructive to examine how advertising varies from small to large markets. Whereas all markets receive a proportional share of national advertising, the larger (and thus, more attractive) markets receive a noticeably larger share of local advertising. According to local television advertising figures monitored by Competitrack, in 1997 AT&T spent over six times as much *per capita* for local spot advertising in Los Angeles as it did in Minneapolis.²² Less urban markets receive a disproportionately smaller share of AT&T's advertising dollars. As a result, retail customers in New York City and Los Angeles are better informed about "national" discount calling plans and are on average more likely to sign up for these plans. Thus, customers with similar calling patterns but living in different regions of the country may on average pay very different effective prices for their service.

39. To lower prices selectively to large customers, the Big Three employ a vast range of contractual provisions to adhere to the letter of the non-discrimination provisions, while clearly providing large users with lower prices than those available to ordinary residential consumers and resellers. Typical example of such contractual devices are:

- advance information requirements (a reseller must specify all locations or phone numbers covered by the contract before obtaining service);
- short ordering windows (service can be initially ordered under a particular tariff only for a month or so – by the time resellers find out about the tariff, the ordering windows has closed); and
- "promotional" rates that are continuously renewed to maintain lower effective prices to preferred customers (who are selectively informed of promotions).

²² See *Testimony of Robert G. Harris*, In the Matter of the Investigation into U S WEST Communications, Inc.'s Compliance with Section 271(c) of the Telecommunications Act of 1996, Before The Public Service Commission of the State of Montana, Utility Division, Docket No. D97.5.87, March 30, 1998. Referring to Competitrack data.

40. The Big Three are able to price discriminate amongst retail residential and small business customers as well. Through various calling plans and discounts, they market to specific price-sensitive customers while retaining high rates to those more willing to pay them. Such selective marketing is not necessarily geographically oriented. In regions or customer segments where they face increased competition, the Big Three are able to price more aggressively, while at the same time avoiding the lowering of prices toward segments that are not subject to as much price competition. For instance, when MCI loses a retail residential customer to GTE, it can call that customer and offer it a discount to return while maintaining the old high price to an MCI subscriber next door.

41. The ability of long-distance companies to differentiate their marketing and use contractual devices to offer selective discounts implies that they can effectively get around the geographical rate averaging requirements, simply through differential advertising and discounting. We should therefore expect that effective interstate rates must vary significantly from state to state, reflecting competitive conditions. Unfortunately, this data is fiercely protected by the long-distance companies, who are perhaps wary of releasing data that would confirm that consumers in rural areas are paying more than urban consumers for equivalent service.

D. Conclusion on the impact of geographic averaging requirements

42. I have shown that there is substantial geographical variation in the pricing of transport and of wholesale long-distance network services. Importantly, there even appears to be geographical variation in average prices for retail service, despite the non-discrimination statutes relied upon by MCI and WorldCom. It is nevertheless clear that the geographical rate averaging requirement upon which Carlton and Sider rest their case does not hold in practice.

III. Entry is Chasing Excess Profits

43. Entry in an industry can be usually explained by a combination of three possible factors:
- prices are substantially above costs, with incumbents earning supernormal profits
 - entrants have access to lower cost technology
 - rapid expansion in demand facilitates new entry

In this case, entry is almost entirely driven by the realization that prices are currently above cost, and that they will remain that way for some time.

A. End-User Prices are Substantially Above Cost

44. I have shown in my previous long-distance affidavit that end user prices are above cost. The Big Three interexchange carriers (AT&T, MCI and Sprint) have failed to pass-through access charge reductions, and instead have continued to raise their rates, often through seemingly innocuous moves such as restructuring their time-of-day bands. In fact, the Big Three have each raised their rates on their existing business customers at least seven times since 1992.²³ Residential consumers have fared no better. In addition to reductions in access charges, network costs for long-distance carriers have decreased markedly as well, with both the advent of higher transmission speeds (OC-192 replacing OC-48, which replaced OC-3) and the increased utilization of existing fiber assets (Dense Wavelength Division Multiplexing, or DWDM, which allows many OC-192 transmitters to operate on the same fiber pair instead of requiring separate fibers). Given that access charges have not been fully passed through, it follows that network cost reductions have not been passed through at all. Therefore, the combination of the access charges reductions and improvements in technology has increased the gap between price and cost.

45. Entrants must of course be expecting that prices will remain above cost for them to recoup their investment. As I show below, that expectation is entirely rational given the pricing dynamics of the long-distance industry. The consummation of this merger will prolong the amount of time that prices will be sustained above cost. Therefore, it is hardly surprising that the stocks of all competitors (in provision of transport and network services) earned above-average returns (risk-adjusted relative to the S&P 500) in the four months following the announcement of the transaction, as was shown in Exhibit 33 of my previous long-distance affidavit.

B. Alternative Explanations

46. Absent the lure of excess returns, the alternative explanations for entry are not satisfactory. Entrants clearly cannot have exclusive access to better technology than the incumbents. A dramatic increase in demand is also an unlikely explanation.

²³ LCI has made this observation a key ingredient of a recent marketing campaign. See "A Guaranteed Plus," LCI full-page advertisement, *Business Week*, 4/6/98, p. 51.

1. New entrants do not have cost advantages over existing networks

47. MCI and WorldCom claim in their *Second Joint Reply* that recently-constructed fiber optic networks (such as Qwest) have cost advantages over older incumbent networks, making the new networks more effective competitors.²⁴ While this might or might not be true from an accounting or book-value perspective, it is most certainly not true from the economically relevant perspective of forward-looking opportunity costs. When an economic agent decides whether to upgrade its existing capital equipment, it compares the present value of profits it believes it could earn by keeping its existing equipment in operation versus the present value of buying new equipment and upgrading its operations. Since the capital cost of the existing equipment was already incurred (or "sunk"), it is not included in the present value calculus of keeping existing equipment.²⁵

48. Incumbent long-distance carriers which have already constructed their networks have largely sunk capital costs compared to the new entrants who are in the process of building out their networks and have not yet fully incurred their capital construction costs. Given the incumbents' sunk costs, their most economically rational strategy (*i.e.* the one with the highest net present value) may be to operate their networks using older technology for some period of time, knowing that when competitive market conditions demand it, they can quickly implement more up-to-date technology. For example, the most advanced dense wave division multiplexing (DWDM) technology is readily available and can be quickly installed on existing fiber optic networks. Incumbent carriers such as AT&T, MCI, WorldCom, or Sprint can decide at any time to upgrade their technologies by installing these newer electronics. Thus, the vintage of technology being used to provision services will not provide any long-run cost advantages to new entrants.

49. In fact, new entrants which have not yet built out their networks have very high start-up costs. These costs include, for example, the costs of securing rights-of-way, constructing infrastructure and laying fiber cables. For the most part incumbents do not face such start-up costs, because they have already secured these assets. In fact, in addition to the ability to upgrade electronics on existing fiber, there are other reasons to believe incumbents have cost advantages over new entrants who have not yet built out their networks. For example, incumbents can expand their capacity at any time by installing more fiber in existing rights of way (*i.e.* pulling additional fiber strands through existing conduits or ducts) or lighting dark fiber, raising line speeds, or installing DWDM equipment. These capacity expansions by incumbents are much less expensive than laying new fiber from scratch, as the new entrants are doing.

²⁴ *Second Joint Reply of WorldCom, Inc. and MCI Communications Corporation*, CC Docket No. 97-211, March 20, 1998, p. 38.

²⁵ In reality, most assets have some salvage value and are not completely "sunk." Therefore, for the purpose of a net present value calculation, the net salvage value plus the forgone interest on this salvage value should be included as cost of keeping existing equipment in operation.

50. Even more important cost advantages of incumbents over new entrants are the substantial economies of scale, scope, and density they enjoy from the size of their existing customer bases. In general, the incumbents, which have millions of customers on their networks, can more cost-effectively install higher capacity transmission lines between any two points they serve than can new entrants (between the same two points), because new entrants have much smaller customer bases and correspondingly smaller traffic flows. I review these economies in more detail below.

2. Response to exogenous increase in demand

51. The growth of demand for long-distance services, by itself, does not justify entry by additional entrants. Demand for traditional services has scarcely kept up with the quadrupling of line speeds in the last few years, let alone with the advent of DWDM, which promises even more information carrying capacity on the same few strands. Admittedly, demand for Internet services has exploded, but observers must consider that only a fraction of the national transport capacity is occupied by the long-distance transmission of Internet data. For example, I have examined the coast-to-coast transport links of the top five domestic Internet backbones (who mostly use the same transport facilities as the traditional long-distance voice network), representing over 80% of national Internet backbone services (as measured by ISP connections and explained in my original Internet affidavit). I have tabulated the capacity of the links they have in service between the two coasts.²⁶ As shown, the existing combined backbones could all be accommodated on one single OC-192 system. Even if Internet traffic were to multiply by a factor of 8 every year, the increased backbone capacity necessary for the next two years could still be accommodated on a single 96 strand cable operating at OC-192. Any one of the incumbent carriers could accommodate this traffic once the necessary transmission equipment upgrades are installed.

²⁶ I used the Mississippi River as a convenient east-west divide, and counted the number and type of circuits crossing this demarcation.

Table 5: Internet Coast-to-Coast Backbone Links Currently In Use

<u>Backbone Provider</u>	<u>Line Speed</u>		
	<u>DS-3</u>	<u>OC-3</u>	<u>OC-12</u>
MCI	1	5	--
WorldCom	45	--	--
Sprint	--	9	1
Agis	3	--	--
GTE (BBN)	3	--	--
Total	52	14	1
Total OC-192 Equivalents			0.55

Source: Boardwatch Magazine, ISP Directory, Fall 1997.

IV. New Entrants Lack WorldCom's Ability to Provide Competition to the Big Three

A. New entrants do not have sufficient coverage to compete with the Big Three

52. As I stated in my first long-distance affidavit, the new entrants cited by Drs. Carlton and Sider are building thin networks which focus on high traffic density routes or on serving specific regions; these thin networks do not provide ubiquitous competitive pressure on rural areas. Because long-distance telecommunications service is location-specific (*i.e.* it can not be physically shipped from one area to another), capacity in one geographic area is not a good substitute for capacity in another. As such, the competitive impact of these thin new networks should not be overstated. Below, I update the population coverage analysis in my first long-distance affidavit and I review the status and competitive impact of several of the new entrants cited by Carlton and Sider.

53. When I introduced the concept of "population coverage" in my first long-distance affidavit, I deliberately used two conservative assumptions, mainly due to the scarcity of available data. The first assumption was that a single POP in a LATA could provide 100 percent coverage of that LATA. The second assumption was that all of a company's reported POPs were "on-net," or equivalently, that "off-net" POPs had the same competitive relevance as "on-net" POPs. As I noted in that affidavit, these assumptions are conservative in the sense that their use leads to an overstatement of a network's population coverage. In other words, use of these assumptions understates the anticompetitive effects of the transaction. Not only did the MCI-WorldCom economists adopt these assumptions, but the Carlton and Sider (C-S) analysis includes flaws which greatly compound the conservative nature of the analysis:

- C-S only included POPs for one division of WorldCom, LDDS/Metromedia, and did not include the 30-plus POPs operated exclusively by WorldCom's WilTel division.²⁷ Including these POPs increases WorldCom's population coverage from 83% to 87%.
- C-S included POPs for new entrants which are scheduled to be online by year-end 1999, but for incumbents they mysteriously included only actual operating POPs as of year-end 1997. Given WorldCom's rapid growth, its ambitious investment program that was planned pre-merger, and its purchase of Qwest dark fiber, it is reasonable to expect that WorldCom would have had essentially ubiquitous coverage by the end of 1999.
- C-S mistakenly included Vyvx POPs when evaluating the coverage of Williams Communications, despite the fact that Williams is bound by its non-compete agreement with WorldCom not to use the Vyvx network to carry switched voice or data traffic.
- C-S mistakenly included 20 POPs for IXC Communications which, according to IXC's own plans, will not be operating on-net by the end of 1999.
- C-S have not taken into account the delays that Qwest is experiencing in construction of its network, which I detail below. Additionally, some of the Qwest POPs listed by C-S are not supported by publicly available information.

²⁷ This data was not available to me at the time of my first long-distance affidavit, but I have now revised my analysis to incorporate it.

54. As I have shown in my original affidavit, "off-net" POPs do not provide the same competitive impact as "on-net" POPs, due to the significant additional cost of terminating off-net traffic. Additional limitations include the fact that when carriers use "off-net" POPs, they do not have operational control over their networks, because they must rely on the underlying facilities-based carrier to provide adequate monitoring and maintenance of the transmission facility. While transport contracts are written to ensure certain levels of service, the leasing carriers are often unable to act quickly on a problem stemming from the underlying carrier's service and are left dependent on their competitors.²⁸ I therefore discount POPs which clearly are, or will be, "off-net."^{29,30} Additionally, I have removed the Vyvx POPs from the Williams POP count because, as I describe more fully below, they are actually under the control of WorldCom and not allowed to carry voice or data traffic. Finally, I have taken into account WorldCom's expansion program. Prior to the announcement of the merger, WorldCom had scheduled a multi-billion dollar investment program, which has been now put on hold. It is reasonable to expect that, absent the merger, WorldCom would have achieved a coverage similar to Sprint's by the end of 1999.

55. As a result, the "entrants'" coverage estimates presented by Carlton and Sider are biased upwards, while WorldCom's network coverage is understated (because of the failure to account for existing WilTel POPs as well as planned additions). In particular, Carlton and Sider's case relies on Qwest's and Williams' rapid expansion, approaching coverage similar to WorldCom's coverage today. Their conclusion that entrants will easily be able to replicate WorldCom's coverage is therefore unfounded and inappropriate for analyzing the anticompetitive implications of the transaction. Once revised to account for these methodological issues, as shown in Table 6 below, it is clear that, post-merger, there would be a significant gap in coverage between the four large interexchange carriers and the entrants stressed by Carlton and Sider:

²⁸ *Long-distance Affidavit of Robert G. Harris on behalf of GTE*, In the Matter of Applications of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc., CC Docket No. 97-211, Before the Federal Communications Commission, March 13, 1998.

²⁹ Unless otherwise specified, I have conservatively assumed that if a carrier obtains fiber from another carrier via a joint ownership of the fiber routes, through sales of individual strands or through fiber swaps that POPs on these fiber strands are fully "on-net." This is a conservative assumption because POPs on shared fiber routes are not as operationally independent as POPs on free-standing fiber networks.

³⁰ For example, the IXC and Williams route maps report a number of POPs which are "off-net" and will not be "on-net" by 1999. See <http://www.IXC-Comm.com/netmap.html> and <http://www.wiltales.com/network/map.html>

Table 6: Population Coverage of WorldCom vis-à-vis New Entrants
Estimated Coverage by December 1999

<u>Company</u>	<u>Percent of Population Covered</u>	
	<u>Carlton-Sider</u>	<u>Harris Revised</u>
WorldCom	83%	99%
Qwest	78%	74%
IXC	61%	62%
Williams	69%	44%

Source: Author's calculations based on publicly available information. I estimate a higher coverage for IXC than do Carlton and Sider, despite the off-net POPs they included, because they also mistakenly exclude large on-net metropolitan areas such as New York.

56. Additionally, Carlton and Sider gloss over the importance of operating multiple POPs in a LATA. The assumption that a single POP in a LATA will be able to cost-effectively serve the entire population of the LATA is less than accurate because many LATAs are geographically large and contain numerous, fragmented local exchange carriers who provide originating and terminating long-distance access. A single POP is unlikely to be geographically proximate to all of these companies, and it may not be possible or cost-effective to purchase transport from the local exchange company (such as the Bell Company or independent carrier) which serves the building where the POP is located. This is one of the reasons why the Big Three long-distance companies – which serve 100 percent of the national population³¹ – often have multiple POPs in a single LATA, even in rural state like Montana.³²

57. MCI-WorldCom's experts mistakenly suggest that, in terms of supply capacity, new market entrants approach the coverage of WorldCom. Of course, they neglect to make the reasonable assumption that WorldCom's own network would expand to a similar extent if there were no merger. Drs. Carlton and Sider do not account for potential future growth in the number of POPs on WorldCom's or Sprint's networks.

³¹ Sprint is a minor exception, lacking a POP in just a few, highly rural LATAs.

³² For example, AT&T, MCI and Sprint have 6, 6, and 2 POPs, respectively, in Montana. See *Testimony of Robert G. Harris*, In the Matter of the Application of WorldCom & MCI for Approval to Transfer Control of MCI Communications Corporation to WorldCom, Inc., Utility Division Docket No. D97.10.191, Before the Department of Public Service Regulation, Public Service Commission of the State of Montana, April 20, 1998, Exhibits 14A, 14C.

58. In conclusion, Carlton and Sider ignore the fact that the coverage afforded by WorldCom today (87% of the nation's population) is still superior to the coverage that will be provided (optimistically) by the end of 1999 by the best replacement they can identify, Qwest (74%). Instead, it is clear that none of the entrants they proffer will be able to compensate for the near-ubiquitous coverage that WorldCom would have provided by the end of 1999. In the best case, 26% of the population will be served by three nationwide networks instead of four. While the remaining 74% (or so) of population will be served by four or more networks, one or more of these networks are fledglings, and they will be therefore denied the benefits of competition between four robust networks plus additional fringe competitors.

B. Qualitative Review of New Entrants

59. Drs. Carlton and Sider discuss at length the press releases of the new entrants and equate these to economic actions with significant effects on economic welfare. Carlton and Sider also completely ignore the fact that the entrants they list either labor under significant handicaps vis-à-vis WorldCom and the Big Three, or that they simply lack the necessary network quality. I will first briefly review the entrants which Carlton and Sider have merely mentioned without attendant analysis.

1. Williams Companies

60. Williams plans to operate two distinct long-distance networks, Wilcom and Vyvx, whose competitive influence is limited by a number of factors. The Vyvx network operates on a single strand of fiber optic cable retained by Williams from the original WilTel network when it was sold to LDDS and ultimately to WorldCom. Because the network is built with only a single strand, there are inherent capacity constraints on the network, and it lacks the multi-strand, multi-route redundancy typically built into fiber networks. As part of the conditions of the sale of WilTel to LDDS, Williams entered into a non-compete agreement with LDDS, limiting Vyvx to the transport of only multimedia traffic – video, audio, graphic and similar other applications.³³ The agreement specifically prohibits the transmission of voice or data traffic. (It is clear in retrospect that the litigants' choice of distinction was unfortunate. Williams claims that Internet traffic includes graphics and audio, and is hence "multimedia." WorldCom claims that it is "data," and that therefore Williams cannot carry such traffic).

³³ *Williams Communications, Inc. Petition for Declaratory Relief, Money Damages, and Other Relief*, filed in the District Court of Tulsa County, Oklahoma on March 20, 1998, pp. 7, 23, 24.

61. This agreement is currently being litigated, as Williams recently filed suit against WorldCom to enforce portions of their sale agreement. Williams has accused WorldCom of a number of illegal actions designed to hinder Williams' competitive position in telecommunications markets. These allegations include:

- WorldCom's failure to reconfigure the Vyvx fiber strand so that it is more operationally distinct from the WorldCom network;
- WorldCom's use of transmission capacity on the Vyvx network for its own customers; and
- WorldCom's threatened shutdown of the Vyvx fiber.³⁴

62. The largest dispute between the two parties is over the question of whether Internet traffic should be classified as "multimedia" or "data" traffic for purposes of determining whether Vyvx should be allowed to carry the traffic. According to Williams' documents filed in the lawsuit:

"[WorldCom's] repudiation of Williams Communications' rights to utilize the Vyvx SUSA System for Internet purposes has been taken with the purpose and effect of furthering... WorldCom's competitive position in the market for Internet service providers and to injure Williams Communications' competitive ability in that market."³⁵

63. WorldCom's actions regarding the Vyvx fiber provide clear evidence of its desire to restrict competition in key long-distance telecommunications segments. They also demonstrate that, because the Williams Vyvx network is operationally-dependent on WorldCom, it should not be viewed as a free-standing competitor to WorldCom. Despite the fact that Williams nominally retained "ownership" of the Vyvx fiber strand, in reality Williams' property rights are subject to the goodwill and cooperation of WorldCom. Such a relationship is actually closer to buying services via a long-term lease than it is owning an independent network. As such, the Williams Vyvx network is more akin to an off-net, leased facility.

64. The other Williams network, Wilcom, does not have the same restrictions on voice and data traffic and is not operated by WorldCom. This network is currently under construction and will eventually serve high density traffic routes connecting major metropolitan areas. See Exhibit 1 for route maps of the Vyvx and Wilcom networks. Exhibit 1 shows that even after the new Williams network is fully built out, it will not serve substantial geographic portions of the country. The same route map in Exhibit 1 clearly shows that many of the Williams' POPs included in Carlton and Sider's analysis are not "on-net" to either the Vyvx or Wilcom networks.³⁶

³⁴ *Williams Communications, Inc. Petition for Declaratory Relief, Money Damages, and Other Relief*, filed in the District Court of Tulsa County, Oklahoma on March 20, 1998, pp. 12 - 15.

³⁵ *Id.*

³⁶ See "That Williams Network" map at <http://www.willtales.com/network/map.html>.

2. IXC Communications

65. Only a fraction of the planned IXC network is currently operational, including the New York to Los Angeles route, a small Texas route between Dallas and McAllen, and a Midwestern route passing Chicago, Cincinnati, Cleveland, Detroit and Indianapolis. The New York to Los Angeles route was only lit on April 10, 1998.³⁷ However, even if IXC were to build out its network to its claimed 1999 milestones, many of the IXC POPs included in Carlton and Sider's analysis (such as Pittsburgh, PA, Raleigh, NC, and Nashville, TN, Omaha, NE) will remain off-net.³⁸ IXC's single coast-to-coast route had been marked as "in service" on its network map for some time, at least since late 1997, which indicates the industry's propensity to advertise something as built when it clearly is not.

3. Qwest Communications

66. The Qwest network is currently just a limited participant in the telecommunications market, with 1997 revenues of only \$115 million.³⁹ Currently, the network has but one major route lit between Los Angeles and New York. Even after this network is fully built out, it will still fail to cover substantial portions of the United States, suffering from the same limitations as the Williams and IXC networks. Specifically, the Qwest network will serve only major transportation corridors; outlying and isolated markets will be avoided altogether. In its current state of deployment, the Qwest network offers little route redundancy or protection compared to the networks of the Big Three and WorldCom. As Qwest does not appear to have closed any of its fiber rings yet,⁴⁰ its current network does not offer on its own the self-healing protection enjoyed by SONET networks operated by the larger carriers and requires capacity to be leased from other providers to provide redundancy. Additionally, Drs. Carlton and Sider ignore that Qwest is substantially late in the deployment of its network. Qwest has made remarkably little progress since this time last year, as shown in the table below:

³⁷ *IXC Communications Press Release*, "IXC Communications Lights Nation's First New Coast-to-Coast Fiber Optic Network in a Decade," April 10, 1998.

³⁸ See IXC Communications network map at <http://www.IXC-Comm.com/netmap.html>.

³⁹ By comparison, WorldCom and MCI reported 1997 revenues of \$7.35 billion and \$19.7 billion, respectively. See MCI and WorldCom 1997 10-K Reports filed with the SEC, and *Qwest Communications Press Release*, "Fourth Quarter Communications Services Revenue Increases 80 percent," February 11, 1998. (Sum of Carrier Services and Commercial Services for the full year of 1997.)

⁴⁰ See current Qwest network map at <http://www.qwest.net/network/Mainmaps.html>, downloaded June 5, 1998.

Table 7: Build-Out of Qwest's OC-192 Network

<u>Date</u>	<u>Network Route Miles</u>			<u>Switches</u>
	<u>Conduit</u>	<u>Dark*</u>	<u>Lit</u>	
December 31, 1996	3,650	1,800	900	5
April 18, 1997	4,900	2,250	900	5
September 30, 1997	7,900	2,800	2,800	5
December 31, 1997	9,500	3,300	3,400	5
<u>March 31, 1998</u>	<u>11,100</u>	<u>n/a</u>	<u>5,400</u>	<u>5</u>
Year on Year Increase (4/97 to 4/98)	n/a	n/a	4,500	0

Source: Qwest SEC Filings. S-1 April 18, 1997, 10-Q November 1997 (Q3 97), 10K-405 March 1998 (FY 1997), S-4/A May 13, 1998.

Notes: * Installed dark fiber miles exclude lit fiber. Qwest therefore had 5,600 miles of fiber in service as of 9/30/97, 2,800 of which dark and 2,800 lit.

67. The deployment rate can be best gauged by looking at the deployment rate of lit fiber for two reasons. First, conduit and dark fiber are faster to install, being essentially construction work. Lighting the fiber requires splicing and testing the necessary dark fibers, and then installing and testing the optoelectronic and network control equipment. Splicing in particular is a highly skilled and time-consuming task. Additionally, Qwest may be forced to focus on dark fiber as it is substantially behind the delivery schedule for its dark fiber sales, as explained further below. At its current pace, Qwest would light its planned 18,400 route mile network⁴¹ by August 2000 at the earliest, well behind its originally planned completion date of second quarter, 1998.⁴² As can be seen from the table below Qwest does not yet seem to have completed 41% of the network that it should have delivered to Frontier on or before April 30, 1998. And, in fact, Qwest has not reported its network progress in its latest quarterly SEC filings.⁴³ It is noteworthy that key assets that Qwest will acquire from its merger with LCI include LCI's existing fiber route from Chicago to Dallas, as well as routes from Dallas to Washington D.C. and Los Angeles, deliverable by mid-1998,⁴⁴ which may bridge over the delays in Qwest's construction schedule. Finally, Qwest has not increased its deployment of switches at all – it still operates with only five switches.⁴⁵

⁴¹ See Qwest SEC Filing Form S-4/A May 13, 1998.

⁴² Estimated completion date of the Qwest network as reported in Form S-1 (IPO prospectus) for Qwest Communications International Inc., filed with the SEC on Apr. 18, 1997, at page 35. Qwest needs to light up an additional 13,000 miles, which at the current pace of 4,500 miles per year would require over 2.5 years from today to complete.

⁴³ See Qwest Communications Form 10Q, filed with the SEC May 6, 1998 (Q1 1998).

⁴⁴ See Qwest SEC Filing Form S-4/A May 13, 1998 p. 79.

⁴⁵ *Id.*

Table 8: Build-Out Delay of Qwest's OC-192 Network

<u>Frontier Dark Fiber Sale</u> <u>Basic Route Segments Not Yet Complete</u>	<u>Mileage</u>	<u>Original</u> <u>Delivery</u> <u>Date</u>
Chicago – Washington	1,126	4/30/98
Indianapolis - Chicago	215	12/31/97
Yuma – Phoenix	187	1/31/98
Austin – Houston	221	12/31/97
Dallas – Kansas City	639	1/31/98
Denver - El Paso	746	3/31/98
Sacramento – Portland	679	1/31/98
Portland – Seattle	182	1/31/98
Boston – Albany	208	12/31/97
Total Delayed Routes	4,203	
Total Basic Route	10,198	
Proportion Delayed	41%	

Estimates of delayed segments based on segment delivery date reported in Qwest SEC Filings. S-1 April 18, 1997 (IPO prospectus) and on network deployment information as reported by <http://www.qwest.net/network/Mainmaps.html> (downloaded June 6, 1998, network maps last updated May 22, 1998), and in Qwest Communications Form 10Q, filed with the SEC May 6, 1998 (Q1 1998).

68. To account for Qwest's construction delays, I have projected the original deployment dates of Qwest's POPs based on the build-out dates of the various portions of the Qwest network detailed in its IPO prospectus. I then applied a seven month delay (reflecting completion in July 2000 instead of December 1999) to this schedule to estimate the POPs that will be operational as of the cut-off date of December 1999.

69. Analysis of Qwest's construction schedule shows that construction of a fiber network takes substantially longer than Carlton and Sider would have us believe. Qwest started its network construction program in 1995 with the acquisition of Qwest Transmission in January 1995, further advanced by its dark fiber sales to Frontier and WorldCom in 1996.⁴⁶ Taking January 1996 as an "optimistic" starting point, the projected completion date of July 2000 indicates that Qwest's construction of a lit fiber system will have taken approximately 4.6 years.

4. Level 3 Communications

70. Level 3 Communications (formerly Peter Kiewit Sons') is planning to build a network that will operate under an Internet Protocol (IP) structure. This transmission technology, while holding promise, cannot be relied upon in the near term to handle the same scope of traffic that currently travels on other carriers' networks. More importantly, Level 3 only announced its construction intentions in January of this year. To provide further evidence of Level 3's mere infancy, industry observers should note that the company just secured in April the railroad rights-of-way for its fiber network.⁴⁷ With no customers, no name recognition, and only these long-range plans underway, Level 3's network is clearly several years from achieving the "critical mass" necessary to compete in interexchange markets. In the interim, it is following the same approach as so many other aspiring entrants by only buying supply from other networks. In March, it announced it would lease capacity from Frontier Corporation, a company which has had difficulties providing capacity in the past.⁴⁸ Thus, like its hybrid carrier peers, Level 3's own, hard investment in its network is slow in coming. As such, the competitive impact of this company in the near term should be either discounted or ignored altogether.

71. Carlton and Sider do not acknowledge that the case of Level 3, far from proving the ease of entry, demonstrates the complexity of constructing a fiber network. Level 3 expects that:

"over the next 4 to 6 years, ... the Level 3 network will encompass local facilities in approximately 40 North American markets, leased backbone facilities in approximately 10 additional North American markets, and a national or inter-city network covering approximately 15,000 miles"⁴⁹

⁴⁶ In 1995, Qwest enhanced its ability to provide telecommunications services by acquiring the Microwave System through its purchase of Qwest Transmission Inc. for \$18.8 million, and by completing and activating the Cal-Fiber system. Qwest added switching capacity during late 1995 and through 1996 in Denver, Los Angeles, Tampa, and Indianapolis. In 1996, Qwest entered into major construction contracts for the sale of dark fiber to Frontier and WorldCom, whereby Qwest has agreed to install and provide dark fiber to each along the Qwest Network. See Qwest Form S-1, Apr. 18, 1997, at p. 9, 22-23. Qwest subsequently signed an agreement for sale of dark fiber with GTE in 1997.

⁴⁷ See *Level 3 Historical Highlights*, <http://www.level3.com/highlights.html>.

⁴⁸ *Long-distance Affidavit of Robert G. Harris*, CC Docket No. 97-211, March 13, 1998, par. 136.

⁴⁹ See Form 10-K for Level Three Communications (Peter Kiewit Sons') filed December 27, 1997 with SEC at § "Information Services."

72. I note that Level 3 estimates, relative to Qwest, that it will require more time to build a less extensive network, and it does not include all the planning that Level 3 has already undertaken. This estimate should be just as credible as Qwest's, considering that Level 3's predecessor, Peter Kiewit Sons', constructed the MFS network that was eventually acquired by WorldCom, and that the venture is headed by James Crowe, the former MFS CEO. It therefore appears that five years is a reasonable estimate of the time required to deploy a relevant fiber optic system.

C. As measured by basic financial data, entrants are very small relative to incumbents

73. By any reasonable standard and under optimistic growth projections, the new entrants into the U.S. long-distance market are – and will continue to be – minor players compared to the four large incumbent interexchange providers. Exhibit 2 shows the major long-distance companies' long-distance revenues in 1997. As I had shown in Exhibit 16 of my original affidavit, even assuming very high revenue growth rates for the smaller carriers, it will take five years for these firms to approach a size comparable to the smallest of the Big Three. Exhibit 2 further compares 1997 stock market capitalization, total assets and capital spending of the smaller competitors with those of the Big Three and WorldCom. Notice the dramatic difference between the four incumbents and the smaller companies. Capital spending figures are particularly striking because many of the smaller carriers are in the process of constructing their networks from scratch, which entails huge one-time expenditures. Despite these one-time network construction expenditures, long-distance spending by the Big Three and WorldCom still dwarfs that of the smaller entrants.

74. More impressive still are the differences in market capitalization of the companies shown in Exhibit 2. WorldCom has already been accorded the status of number two in the long-distance segment by the financial community. With a combined MCI-WorldCom, there will be a substantial gap between the top two companies and the number three carrier (Sprint), with the remaining fringe competitors far behind.

D. Regional Bell Operating Companies (RBOCs)

75. The RBOCs cannot be considered competitors which can effectively substitute the capacity currently being supplied by WorldCom. Section 271 of the Telecommunications Act of 1996 provides a legal barrier to RBOC provision of in-region interLATA services. So far, no RBOC has successfully obtained approval from the FCC to enter in-region interLATA markets. Second, even if an RBOC were to obtain approval to enter interLATA markets, it would be encumbered by the federal rules requiring RBOCs to provide in-region services through separate subsidiaries for at least three years after approval. Even in the most benign case, this rule would prevent RBOCs from obtaining the maximum economies of scope potentially available to them due to the extra transaction costs imposed by this rule. Interexchange companies face no such restrictions. Third, once the RBOCs obtain permission to enter in-region interLATA markets, it will take them several years – just as it did for MCI, Sprint, and WorldCom – to build out competing facilities-based networks.

76. The fact that the RBOCs have signed contracts with facilities-based long-distance carriers provides evidence that they will not be able to quickly construct their networks upon regulatory approval to supply interLATA service. In fact, the sequence of and participants in these contracts confirm that a WorldCom merger with MCI would lead to restricted supply of wholesale long-distance services and facilities. The largest Local Exchange Carrier (LEC) that can already provide service, GTE, selected WorldCom as its wholesale supplier of voice long-distance services. Similarly, Ameritech and SBC Communications both signed contracts with WorldCom for wholesale supply. With one exception, all the other RBOCs signed contracts for voice long-distance services with Sprint.⁵⁰ None signed up with MCI. As Bell Atlantic stated in its *Petition* for this proceeding, MCI tried to impose a non-compete agreement on Bell Atlantic, preventing it from acquiring MCI customers, when MCI was bidding to supply wholesale service to Bell Atlantic.⁵¹ Exhibit 3 provides a list of contracts between incumbent LECs and long-distance suppliers. If WorldCom were not aggressively participating in this wholesale-to-LEC market, Bell Atlantic would not have gotten as favorable terms and conditions as it ultimately obtained. If, post-merger, WorldCom assumes MCI's competitive posture, there will be substantially reduced competition in the market for wholesale services.

77. None of the incumbent local exchange carriers listed in Exhibit 3 have signed contracts for delivery of voice services with the smaller hybrid carriers such as Frontier, LCI, Cable & Wireless, Williams, IXC or Qwest.⁵² US WEST recently signed an agreement with Williams to provide out-of-region services, but this contract was for data traffic only.⁵³ Although US WEST and Ameritech have both entered into marketing pacts with Qwest, these are not resale arrangements between the BOCs and Qwest. Qwest is reselling service it acquires from other carriers (as it must, lacking a complete national network), and is paying a small fee to the two BOCs to serve as marketing agents for its Qwest-brand long-distance service. In conclusion, the reason none of the local companies are buying wholesale voice capacity from the hybrid carriers is that resellers require the ability to complete long-distance calls anywhere in the United States, and the only carriers who can reliably provide this service at competitive rates are WorldCom and the Big Three.

⁵⁰ BellSouth Corporation signed a letter of intent with AT&T.

⁵¹ *Bell Atlantic Petition to FCC to Deny the Application of WorldCom or, in the Alternative, to Impose Conditions In the Matter of Application of WorldCom Inc. for Transfers of Control of MCI Communications Corporation*, January 5, 1998, p. 14.

⁵² A minor exception is Bell Atlantic-NYNEX Mobile which signed a contract with LCI to resell LCI's services to its cellular customers. See NYNEX Press Release, *LCI International Selected as Carrier of Long-Distance For Bell Atlantic NYNEX Mobile*, February 9, 1996.

⁵³ *U S WEST Communications Press Release*, "U S WEST Communications Announces Strategic Partnership on Nationwide Fiber-Optic Network with Williams Communications," January 5, 1998. (<http://www.uswest.com/com/insideusw/news/010598.html>)

E. Impediments to a multi-vendor strategy

78. Contrary to Carlton and Sider's suggestion, a large retailer of long-distance services cannot rely on a multi-vendor strategy to obtain wholesale long-distance service. Instead, they need to buy service from a wholesale provider with an ubiquitous presence such as WorldCom. Quite simply, the transaction costs that arise from using multiple vendors are prohibitively high, and the cobbled service that results is much less reliable. As I further explain below, a multi-vendor strategy is therefore not an economically relevant substitute.

79. First, one must recognize that, even when considering voice services only, there is a rich mix of long-distance services. 1+ voice is a distinct service from 800 service, which is different still from calling card products. Each service is provisioned differently, and uses different parts of the network. It is therefore possible to use different vendors for different products (for example, buying wholesale 1+ minutes from WorldCom, wholesale 800 minutes from Sprint, and wholesale calling card products from MCI). However, the transaction costs and business risks of attempting to integrate multiple vendors in a single product do not make this a worthwhile endeavor.

80. It is instructive to look at 1+ dialing, which appears to be the simplest retail long-distance product. When a customer signs up with a long-distance carrier, the local company serving the customer needs to be notified of the new default 1+ carrier, in the form of an assigned Carrier Identification Code (CIC code - the familiar 10XXX prefix).⁵⁴ The carrier also needs to inform the local company how that CIC code is handled - that is, how the carrier's trunk groups which connect at the relevant end-office or tandem should be routed.

81. With a single wholesale vendor of 1+ service, the provisioning process is easy. In GTE's case, all new orders are sent directly to WorldCom, who in turn passes the change in presubscribed carrier to the relevant local companies (known as PIC changes), informing them of the relevant CIC code (in GTE's case 105483), which is literally entered into the end-office switch to identify the customer's default carrier. Local companies are informed only once that WorldCom handles all of GTE's 1+ traffic. Therefore, when any GTE long-distance subscriber dials 1+, the local switch translates it to 105483-1+ and automatically routes it to the designated WorldCom interconnecting trunk. WorldCom completes the call and sends the billing tapes to GTE.

⁵⁴ CIC codes were originally three-digit (10XXX). Due to exhaustion of available codes, a transition has been made to four-digit CIC codes, and a further transition to five digits is being planned.